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NOVEMBER 1988

PIKES PEAK RADIO AMATEUR ASSOCIATION, INC.

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* denotes the first year of a two-year term.

ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado 80935. Cost is 50¢ per month for non-members or a \$4.00 per year subscription. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles is the 21st of the month. Classifieds accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at the Hewlett-Packard facility, at the intersection of Lexington and Union, at 7:30 p.m. All amateurs and interested parties are invited to attend.

Editor: Keith Goobie NYØT, 5335 Coneflower Ln., Colorado Springs, CO 80917 637-1525

BOULDER ANTENNA ISSUE HITS CLOSER TO HOME

(or the Cancer Spreads)

In reaction to an amateur radio operator in the Black Forest requesting a variance for an antenna/tower installation, certain citizens of El Paso County have made representation to the El Paso Land Use Department to implement some very restrictive and what appears to be very discriminatory rules against amateur radio operators contemplating the erection of an antenna/tower. This must not go unchecked or we may indeed be in the same boat as amateurs in the Boulder area.

Malcolm KE9S (along with Bud WBØTIB) will be heading up an effort that will require the support of all amateurs in the El Paso County. A hearing will be convened on 15 November to discuss these proposed rules and our presence and support will be needed. Malcolm KE9S will be keeping us advised through bulletin announcements on the 146.97 repeater.

An idea of the type of restrictions include: the submission to the Land Use Department:

a. Site plan showing all facilities and appurtenances, structures, houses, adjoining properties and houses, roads, electrical transmission and service lines, etc.

b. Listing of frequencies and wave lengths utilized, and amateur radio licence number.

c. Type of tower and/or antenna selected, including proposed height, design, bulk, method of construction, and any apparatus to be located on said tower and/or antenna.

d. Any required engineer's or expert's statements establishing the adequacy of the tower design with respect to free-fall, ice-fall, and any other relevant safety factors.

e. Documentation relative to alternative locations and designs considered, with such locations shown on the site plan as rejected alternatives.

They go to say that where any conflict exists between these regulations and any federal or state regulations, the more restrictive shall apply.

These extracts are only in draft form and are being changed as you read this. Copies of the full package may be obtained from KE9S or on WBØBLV PBBS or DITS & BITS BBS (637-1375).

Your attention is also drawn to the request for funds from the Amateur Radio Legal Defence Fund on page 7. If we are successful with the Boulder case, ours will no longer be a problem.

Keith NYØT for Malcolm KE9S

DITS AND BITS

TRADE - Yesu FT726R setup for OSCAR for Kenwood 811 or Icom 711. Call Al NØCMW @ 473-1660.

NEED - Copy of Manual for Kenwood 7850. Call Al @ 473-1660.

FOR SALE - Kenwood TH215A HT with expanded transmitter, 2 extra battery packs, rapid charger and speaker mike, all like new, asking \$500.00. Call George, N8CIX @ 687-2610.

GIVE-AWAY - Pair of Model 28's. Both of them operate. Wants to get out of basement. Call Lester B. Robertson @ 596-0058.

NOVEMBER CLUB MEETING

The next regularly scheduled meeting of the Pikes Peak Radio Amateur Association will be held at the Hewlett-Packard facility at the intersection of Union and Lexington Boulevards. Directions may be obtained from any Board member of the Club. Meeting time is 730 pm.

The guest speaker for this month is Mr. Steve Linn from the Enforcement Division of the FCC Denver Office. He will talk about the role of the Denver facility, aspects of the Enforcement Division and he will be prepared to answer questions about the FCC, its activities, and antenna issues.

"THE VIEW FROM THE PEAK"

by George Hinds, N8CIX

THE COLORADO STATE PATROL WANTS YOUR HELP IN STOPPING DRUNK/DRUGGED DRIVERS BEFORE THEY STOP YOU.

Amateurs are in a unique position to assist our police, sheriffs and state patrol to get the drunk or drugged driver off the highway -- we have wide coverage repeaters to enhance our two-meter (or 220 - 440) radios in the car, and we have autopatch capabilities for direct, immediate reporting.

The Colorado State Patrol program that deserves support by each of us to our fullest capabilities is **"REDDI" -- REPORT EVERY DRUNK DRIVER IMMEDIATELY.**

Get involved! If you suspect someone may be driving drunk or drugged, report it immediately to the nearest law enforcement agency. If someone at a fixed station is making the call for you, and it's long distance, dial the Operator, advise it's an emergency and request connection to state patrol for the area. A REDDI report can be made collect. Your call counts. Of course, if you're in a city, you can call local police direct. The report should contain at least the following information:

Time and location where you saw the suspected motorist;

Type and color of vehicle and the license plate number (if possible); and

Direction of travel.

Remember: you don't have to give your name. It's helpful if a callback number is given so police can request further information if necessary. The CSP number in the Pikes Peak region is 635-3581.

In the years since the REDDI program began (1980) an average of 7600 reports per year have been made, and this translates to over 53,000 reports with approximately 5,600 arrests - 5,600 potential accidents looking for a spot to happen that didn't happen because someone became involved. One of those possible accidents could involve you, your family or friends - so make it a point to get involved - you can help make REDDI work for everyone's safety. It's an especially important program with the coming holidays - we don't want the holiday season spoiled for anyone because of drunk or drugged drivers....

RADAR DETECTORS LOSING GROUND?.....

With the advent of "instant-on" radar timing guns, and continued use of airplanes and "Vas-car" to catch speeders on the highways, radar detectors are very unreliable as a means of escaping the penalty for breaking speed laws -- the price of a radar detector is going up, while the "protection" afforded becomes less.

It's a known fact that powerful insurance, police and responsible trucking interests are exerting much pressure upon the highway administration in Washington to ban detectors.

While popular opinion holds that one can't ban use of a radio receiver, I would suggest looking at what happened with scanners and cellular telephones. Since the Electronic Privacy Act of 1986 prohibits reception of phone calls as well as several other types of transmissions, would it not be feasible to enact a law that one can't use a radar detector to receive signals?

IT'S TIME TO GET READY FOR WINTER....

That means time to get your mobile gear in top operating condition, from the car battery through the rig to the antenna. It's much more pleasant a task when the temperatures are still moderate and the snow isn't blowing up a blizzard. In a highway emergency, nothing is of less value than a transceiver that quits working just as you come upon the scene. Oh, yes - don't forget to put a couple of extra fuses in the glove compartment, too. An old but warm coat, a blanket, flashlight and jumper cables are helpful, too.

CHRISTMAS DINNER WITH THE MOUNTAIN AMATEUR RADIO CLUB - WOODLAND PARK

The annual MARC Christmas dinnersocial evening this year will be on December 9th -- amateurs and their guests are welcome. It will be at the Lions Camp on Highway 67 north of the city.

While still in the planning stage, there will be roast beef and ham, potatoes, cranberries, green beans, rolls, coffee, tea and dessert.

There'll be plenty of time to get together for socializing, and a laser light show will be presented.

By the time you read this, plans will have been finalized and, should you be interested in attending, you can check with Brian (KE9ICO) at CW Electronics, or call Art Tichenor (WB9BTI) at 684-2025, or call me (N8CIX).

CONTINUED ON PAGE FOUR

The View From the Peak (Cont'd)

MOST HAMS ARE MULTI-LINGUAL.....

And they don't have to take courses in school or college, either.

As an example, thinking about this the other day, I determined that I can speak at least four languages with a reasonable degree of fluency, even if my record in school with Latin and Spanish was a dismal failure.

I became fluent in "railroadese", a very special kind of language that at times can leave a non-railroader wondering what he, or she, is hearing.

It seems like most of my life I've been in photographic darkrooms or behind the lens of a camera for long or short periods of time, at times as a part-time business in law enforcement and always as a hobby. Add another language from that background.

Several years as a general aviation pilot added another language - that of the airman.

I've found that when one becomes involved on a repeater with another amateur having any one of the above backgrounds and they find out the similar interests they have, sometimes they drift off into "slanguage" that leaves others who may be listening wondering as to what planet these strange folks came from.

One event clearly remembered is an occasion when I and another amateur, also a railroader, became engrossed in a conversation on a repeater in Ohio and fell into "railroadese" without thinking about how others would comprehend what we were saying. Without dumping on you some of the rather unusual words and phrases we were tossing back and forth, suffice it to say that the repeater trustee took us to task for speaking what, to him, was undecipherable to a large extent. It turned out that he was concerned about "forbidden" words being used while he was officially responsible for the operation of the system being in compliance with the FCC regulations! Apparently, we may as well have been speaking Turkish or Hindustani as far as his ability to understand much of our QSO...

What about your multi-lingual abilities? Almost everyone has a business or hobby language added to the everyday English we use...

73, George N8CIX

CLUB ELECTIONS 1988

The following is a pictorial account of the outcome of the Club elections this year.



Outgoing Club Executive L-R: Keith NY8T (VP), BDale N3EUA (Board), Al N8CMW (Sec), Max KD8EL (Board), Ron NK8P (Pres), & Bud N8DDF (Tres). Missing Nick KG5N (Board) & Chris NX8E (Board).



Ron NK8P, the outgoing President hands over the gavel to Keith NY8T, the incoming President



Incoming Club Executive L-R: Doug N8HJT (Board), Keith NY8T (Pres), BDale N3EUA (Board), Al N8CMW (Tres), Max KD8EL (Board), Ron NK8P (Tres), Bud N8DDF (Board). Missing Rick WB7THT (VP)

Visiting the 37/97 Repeater

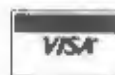
I recently took my life in my hands when I accompanied Bud WBØTIB to the site of the Pikes Peak FM Association 37/97 repeater for maintenance. For those who don't know, Bud is a firefighter and he drives his pickup on those narrow mountain roads the same way he would drive a fire truck down I-25 (Hi)

The UHF side of the repeater had been out of commission for a time and Bud and Warren WOYNE had been working round the clock to get it fixed. It turned out that the problem was actually in a length of coax, one of those places that we often assume to be working (there's nothing to go wrong in a piece of wire is there?). Now the problem had been corrected and it was time to return the repeater to join its 2-meter partner.

We set off shortly before 9am and, after stopping for coffee part way there, arrived on-site at around 10. The repeater was located in a back room, all the way in a corner behind all sorts of junk piled up in front (reminded me of my shack!). Once we had fought our way to the cabinet, opening the door revealed a 25A power supply in the top, a hole below where the UHF repeater belonged, the UHF duplexer cavities, the VHF repeater, and the power control panel. A heavy shielded cable ran from the side of the main cabinet to a separate battery box which provides backup power when line power fails. The VHF duplexer was located up in the dropped ceiling so was not visible.

Reinstalling the UHF box was quite straightforward, but the clock in the VHF box had been running a bit wild and needed a little adjustment. While I held the live box, with people still talking through it unaware of its predicament, Bud took off the top and tweaked the clock. It amazed me just how much space in the box was devoted to the control logic -- all the various special functions, ID (both CW and voice), mailboxes, programming controls, etc. The RF part was really quite small, but then look at the size of today's rigs.

After we got it all back and ran a few quick checks, we locked it up, pushed the heavy cabinet back into the corner, replaced all the junk in front, and Bud set about reprogramming the UHF side. It was then we discovered that the UHF and VHF sides could not be linked and we had to pull the whole thing out again! One wrong connection in the rear was responsible (thanks, Bud!) but that was soon fixed and everything worked fine. With the basic necessities of programming completed so it had a legal ID, we set off back to the Springs. By now I was



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getting more used to Bud's driving, so I wasn't quite as petrified as I had been earlier.

I don't think I'd like to go there with him in the winter, but Bud will probably be there. When something goes wrong, he'll go fix it whether driving on the road or on the snow bank at the edge. I now have a little more respect for those who go out of their way to maintain these machines that we sometimes take for granted but which do need a little TLC every so often.

Dave NATION



Bud WBØTIB looking for a bigger hammer!

ANTENNAS

by Chris Smith
NX8E

Last month I began a discussion of quadrature hybrid circuits for use in antennas. If you haven't read last month's column and you're wondering what I'm discussing, you may want to locate a copy of the previous issue and read "part 1" of this topic.

Figure 1 is a corrected copy of the quadrature hybrid. It shows how a 180 degree hybrid can be connected to some wideband phase shift networks to make the quadrature variety. Note that the location of the 180 degree label was shifted, and that one of the capacitors should be 47pf instead of 41pf.

The labels on the box representing the 180 degree hybrid are important. They represent the relative phase between the ports joined by the arcs. If you trace the signal from the generator, you see that it is delivered to the upper port at zero relative phase. Similarly, it is delivered to the lower port at 180 degree phase. What happens if both signals are reflected at their ports? The reflected signals can return to the right or left. When they go to the right, they recombine at zero relative phase. However, the bottom signal was already shifted 180 degrees so the two signals cancel. The 50 ohm load at the right hand port would see no signal. The signals also can go to the left. When they do, the bottom signal will undergo a second 180 degree phase shift. It reaches the input port with 360 degrees of phase shift and adds to the signal from the top port. The generator sees all the reflected wave.

The quadrature networks changes the overall effect. If the reflection is at the load end of the two networks, another 180 degrees of phase shift occurs between the upper and lower signals. (The signals are shifted by 90 degrees in going to the load, that's why the networks are quadrature networks. They are shifted another 90 degrees after they are reflected and pass back through the network. Thus the total difference in phase is 180 degrees.) I'll let you work out the details, but the result is, the reflected signals end up in the load attached to the right hand port of the 180 degree hybrid. If that load is matched to the hybrid impedance, the signal is absorbed. The generator sees no reflections in this case. That means if your transmitter is the generator, it sees a perfect 1:1 VSWR load.

To be more accurate, the symmetric reflections from the loads terminating the quadra-

ture network are sent to the load, and the antisymmetric reflections are reflected to the generator. The key is that identical loads will produce symmetric reflections, which the generator will never see.

This offers the possibility of a reflectionless antenna. Consider what happens if identical length, crossed dipoles are fed by the quadrature hybrid. Since they are orthogonal, they present the same load. Even though they may reflect some or most of the signal, the reflected power is sent to the load. The transmitter sees no reflected power. It doesn't matter how big the dipoles are, as long as they are identical. This makes the setup ideal for a broadband, small antenna. (Perhaps it is an emergency antenna that can be set up in a small place in a very short time.)

The quadrature hybrid isn't magic, of course. If the antennas reflect rather than radiate, the power ends up in the dummy load. The radiation efficiency will be small. When the dipoles radiate well, then there will be little reflected power and the efficiency will be high.

Design considerations for quadrature hybrids will be discussed in a future column.

NX8E

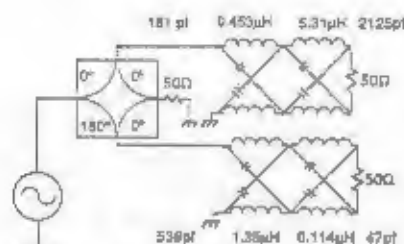


Figure 1: Quadrature Hybrid Constructed from 180° Hybrid and Quadrature Phase Shift Network

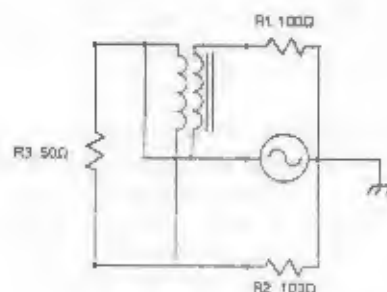


Figure 2: A Simple 180° Hybrid Using Transmission Line Transformers

Amateur Radio Legal Defense Fund

SARES / 15643 East 35th Place / Aurora, CO 80011

A Potential Problem For Every Amateur in America

On July 29, 1988, a federal judge in Denver, Colorado issued a ruling that an amateur in Boulder County, Colorado could put up one tower at 35 feet elevation. Further, the judge ruled some amateurs could be completely denied their ability to communicate.

This ruling is a direct contradiction to PRB 1, a federal declaratory rule denying local governments the power to limit towers or to preclude the ability of an amateur to communicate.

The judge, in her ruling, effectively limited every amateur tower to 35 feet in Boulder County, Colorado. But the impact is broader than Boulder County ... Colorado ... the west ... it potentially affects every radio amateur!

Why is This Important?

If this ruling is left as is, odds are, it could affect every amateur in America. Court rulings since PRB 1 was passed have held that the FCC governs over all local governments ruling in amateur radio cases guaranteeing that amateurs can erect towers of sufficient height. This case effectively negates that premise. The judge ruled that some amateurs can be denied the actual use of their stations.

How Does This Affect You?

Unless adequate funds are generated to appeal this case, an amateur could not put up an antenna that would be over a quarter of a wavelength high on any band except ten meters. Do you want to maintain your ability to enjoy your hobby to the fullest?

This case does directly affect you!

What Can We Do?

In order to effectively appeal this case in the federal district court in Denver, Colorado, a case that we can win, \$50,000 needs to be raised before. Why does it cost so much to appeal a court case? Court filing fees, legal fees and the cost of trying the case are expensive.

Therefore, may we ask for your kind, generous, sustaining support?

How Can You Invest Now in The Future of Amateur Radio?

You can be assured that every dollar you give will go directly toward the litigation of this important court case. No fees are being charged for fund raising; many legal fees have been donated; and the fund is administered by an impartial seven-member board, including: Lys Carey-KØPGM, Lauren Libby-KXQO, Glen Schultz-WØLJR, Karen Schultz-KAØCDN, Edith Sheffield-KAØMQA, Bill Sheffield-KQØJ, and Carl Smith-WØBWJ.

What does this mean? If a person were to invest in the Amateur Legal Defense Fund, because of tax deductions, you will be able to deduct the amount off your income taxes. Thus a \$50, \$100, or \$250 gift costs little to make a considerable impact. Please join us in this quest to continue enjoying this great hobby. Will you help today?

Yes! Count Me In! Here is My Tax Deductable Gift To The Amateur Radio Legal Defense Fund!

☐ \$1,000 Total ☐ \$500 Total ☐ \$100 Total ☐ \$_____ Total
\$_____ Monthly for _____ Months \$_____ Quarterly \$_____ One Time Donation

Name: _____ Call Sign: _____

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BASIC ANTENNAS

BY KDSO

So far, we have talked of the Inverted Vee antenna and ways to modify it, for use on lower frequencies. In this month's article I would like to discuss the Vertical antenna. In point of fact, the Quarter Wave or "Marconi" antenna, is the most overall efficient antenna for use with a transmitter, there is.

The first question that usually comes to mind is what do I build it with, How big do I make it, How much does it cost and Will it match my transmitter, easily?

There are several ways to build it and probably the key is, what band is it for? Size now becomes a factor, so we must first determine the length of this Vertical and is it be a Mono-bander (one band) or serve on other frequencies, too?

Let's keep it simple first and look at the Mono-bander. How tall will it be?? The formula for a quarter wave (1/4), Vertical antenna is as follows: $234/\text{frequency (Mhz)} = \text{Length (feet)}$ for ex. at 14.250 Mhz, using our formula: $234/14.250 = 16.42$ feet. We can round that off to 16 and a half feet, with acceptable results. We should achieve good band width results, using tubing for construction of the antenna.

Copper tubing comes in rolls, of various lengths, or straight sections of 10 feet. With the roll out type, you pay dearly. With the straight sections, the cost comes down quickly and this material can be obtained at most any Hardware store. Roll type tubing is O.K., if you have a suspension point high enough to hang it from. Straight sections will stand O.K., with some guying, for long lengths, used in the lower frequencies.

Before we go on here, I will give you the quarter wave lengths for 40, 20, 15 and 10 meters: 40 meters 32.5 feet, 20 meters 16.5 feet, 15 meters 11.0 feet, 10 meters 8.25 feet (for Novice, 8.0 feet for general and 29.6 FM).

I would use standard 1/2 inch copper pipe in all cases. You can buy sleeve, to put two or more sections together. I would also get some 1/2 wooden dowel to act as strengtheners inside the tubing. These should be at least 12 inches in length. The connecting sleeves are soldered on and so a propane torch, is needed plus some 60-40 solder. The strengtheners should be inserted 6 inches into the lower tube. You can then drill into the tube and the dowel and put an ordinary machine screw into the hole to hold the dowel in place. You will need a tube cutter or hacksaw to trim off the excess of the second piece of copper pipe. Do this before mounting

the second length. You will need a cap piece to cover the open end. We don't want water inside the pipe. Which reminds me to remind you, Cover that screw in the side of the first section, holding the dowel, with RTV sealer (bath tub caulk) No water needed there either.

Now to solder these joints be sure to clean up the joint area first with some sand paper so we get a good flow of solder. Remember too, that solder flows towards heat, so if you were wondering how to get that solder up inside that joint, Now you know. Heat at the center of the sleeve and apply the solder at the lip edge of the joint, the solder will flow inside. (NOTE) IF YOU ARE WORRIED, about the dowel burning up, wet it first.

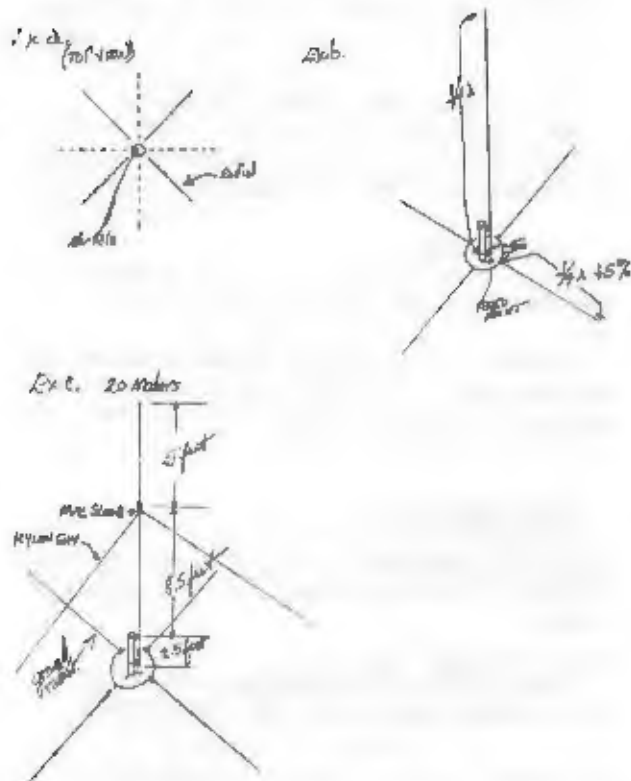
O.K. so now you have the Vertical radiator but, what of the ground, or counterpoise sections? Well, they should be five percent longer than the radiator is, or at least 1/8th of the wave length. The latter not being so efficient. There should be at least four radials, eight is better and most efficient is 120; equally spaced in a pattern. See example a.

Set the vertical up so you can have the radials terminated to a ring around the base of the vertical section, See example b.

There are several ways to mount the vertical. Probably the easiest is to set a 2X4, six feet long, three feet into the ground. Mount the vertical in the three feet above the ground. The use of stand off insulators, would be best but if none are available, I would simply coat the 2X4 with some type of varnish and strap the vertical to it with water hose clamps. You will likely need to use 1X2's on either side of the vertical, to get a good steady grip on the antenna. The base should be about one inch off of the ground. You can also use a 4X4, of the same length and auger a hole into the center of the 4X4 some three feet and set the vertical into the hole and then drill into the side of the 4X4 to tap for the center conductor of the coax. The ways are endless. In any event you'll need some PVC tube to slip over the vertical about 3/4 of the way up the antenna. This will give you a tie point for the nylon rope to use as guys and also prevent your antenna from bending in the wind. If you choose to put up a 40 meter antenna, you'll need guys at 1/3 and 2/3 the way up the vertical. For 10 meters guys will not be necessary. See example c.

The feed point impedance for this antenna is 50 ohms, so RG 58, RG8X and RG 8, will work fine. The angle of radiation on this antenna will be near 45 degrees. Next month "Designing 5/8 wave radiators, for low angle radiation."

73's Paul KDSO



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TAB BOOKS

MINUTES OF OCT GENERAL MEETING

submitted by AJ N0CMW, secretary

The general meeting of the Pikes Peak Radio Amateur Association was held at the Hewlett-Packard Briargate Facility, Wednesday evening 12 Oct 1988. The meeting was called to order by the president Ron NKEP at 19:30, and followed by the introduction of members and guests.

The minutes of the previous General Meeting and Board meeting were approved as printed in O-Beal.

Committee Reports

Note: Anyone wishing to help out on any of these committees, please contact the chairman at the phone number listed. Thank you for your support.

Treasurer - Bud N0DDF (599-7699)

Previous balance was \$2020.12, income of \$0089.23, expenses of \$80.52, leaving a balance \$2028.83.

Interference - Ron NKEP (593-8352)

Have one case of telephone interference pending.

Education - Dave N4DJS (531-0633)

Novice classes started Oct 4 with 17 prospective hams.

Publicity - Karen N1FED (495-0091)

Publicity has been successful in getting students for the Novice classes.

Colorado Council of Amateur Radio

Clubs (CCARC) - Oak K0ROL (591-1426)
Nil

Deaf and Blind School - Jim WA9ABB (598-7543)

Classes are progressing along very well, however would like to have one on one coverage for the students. If interested please contact Jim WA9ABB.

O-Beal - Keith NY6T (637-1525)

Keith asked if anyone was interested in having their shack photographed for O-Beal. Also talked about a new Trivia corner in O-Beal as well.

ARES - Mallory N0JKE (591-0049)

Nothing to report.

Public Service - Mike K0TER (636-1290)

Jim WA9ABB spoke up and thanked those who had helped out on the APA Volksmarch.

VE Testing - Max KD0EL (488-9289)

Max stated that the next VE Testing will be 19 Nov 88 at the 1st United Methodist church at St Vrain and Nevada.

Old Business

Pete N0LA is in hospital with a broken leg and he would like to have some visitors.

Another call was put out for assistance for an antenna party for W0GCN, who is physically not able to do it himself. Please contact AL N0CMW or Harley KC0TQ if interested.

New Business

Mike K0TER passed around a petition for Brian Lord in El Paso County. He is seeking a variance to erect an antenna higher than local ordinances permit.

Chris NX0E needs help on a couple of antenna projects, namely for the D&B school.



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Elections for the Club were held and the outcome is as follows: President-Kelth-NY0T, Vice President-Rick-WB7THT, Secretary-AL-N0CMW, Treasurer-Ron-NK0P, Board-BDale-N3EUA, Board-Bud-N0DDF, Board-Doug-N0HJT, Board-Max-KD0EL.

Prizes - Keith NY0T:

Winners were:

KC6TO-Harley-World Map
KA7NNX-Susan-US Map
KR0OL-Oak-Scanner Antenna
N0HJT-Doug-ARRL Repeater Dir
WB6FRV-Ron-Plastic Tape
KASWIE-Fred-Mystery Prize
K2MAH-Arthur-Selder Sucker
KE9S-Malcolm-Books
N8CIX-George-Books
KASWIE-Fred-Books
N0ISV-Wayne-Books

Nov 83

Andy N0CCZ spoke for a few minutes on the Networking Conference that he recently attended. He was followed by Lauren KX0O who spoke on microwave frequencies and how he set the recent US land record for 3456 Mhz from atop Pike Peak.

The meeting was adjourned at 2130.
 The next meeting will be 09 Nov 83.

Minutes of the OCT Board Meeting

submitted by Al N0CMW

The Oct Board Meeting was held at the QTH of Keith NY0T. In attendance were Bud N0DDF, Al N0CMW, Ron NK0P, Rick WB7THT, Max KD0EL, Doug N0HJT and Keith NY0T.

The Board approved that the printing of 400 B-Beats per month in lieu of 325 copies.

The Board members were tasked to think of ideas for guests speakers for the upcoming club meetings. They are to report their findings at the next Board meeting.

Rick WB7THT has volunteered to set up the Club Xmas party. He will tentatively set it up for 30 people.

The Board authorized the Treasurer to donate \$300.00 for the Amateur Radio Legal Defence Fund. This was not completed from the previous Board Meeting as there was no quorum.

The Board decide not to pursue the idea of having meals at the HP facility. We will continue to have the donuts and coffee.

Max KD0EL has volunteered to search out a new spot for locating the Club property.

The meeting adjourned at 2030 hrs.

AFA RADIO CLUB MINUTES

The meeting was held on Oct 11 at 1130 hrs at Arnold Hall. Present were Andy N0CCZ, Ron NK0P, Jim WA9ABB, Doug N0HJT, and Al N0CMW. Treasurer reported previous balance of \$30.00, income of \$5.00 and new balance of \$35.00. Andy brought up the idea of the Club holding a network conference on Oct 7, 1989 at the AFA. Doug N0HJT has agreed to look into this. The meeting adjourned at 1230 hrs. Submitted by Al N0CMW.

TRIVIA CORNER

The winner of last month's trivia was Walt Figel, W4OHS. The answer to 3E8MPS is: 300,000,000 meters per second - The speed of light (or radio waves). The key: The letter "E" is used in computer programming to signify "Ten to the xth power". Here 3E8 is three times ten to the eight. Guess the guy thought that his car was fast.

NOVEMBER TRIVIA: A ham received the social security number 144-40-5100. He was glad that it would be so easy to remember since each part related to ham radio. How So?

Remember mail your entries to TRIVIA, 7460 Tans Drive, Colo Spgs, CO 80920. Winner gets a new HF balun.



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10/88

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